

## Webquest ES2803 - Stellar Spectra & Temp.

1. How do you think the light from a star might indicate the star's temp.?

Students should try to connect prior knowledge of light properties to the temp. of stars - candle flames - energy of different colors based on  $\lambda$ , etc.

2. Group the 12 Spectra and describe the criteria used to group.

1, 8, 3

Bright blue &  
thick dark line  
in red.

9, 12, 5

Bright yellow, orange  
surrounded by two  
thick dark lines.

2, 6, 7

Bright blue,  
triple black  
lines in blue  
end of spectrum.

4, 10, 11

Bright red, triple  
dark lines around  
and in-between orange & red.

3. Regroup & compare to your lists from question #2.

A

2, 6, 7

B

1, 3, 8

C

5, 9, 12

D

4, 10, 11

These groups match perfectly to my groups in question #2.

4. Record peak emission wavelengths.

A

2800 Å

B

3600 Å

C

5500 Å

D

7000 Å

5. 10,000 °C

8,000 °C

5,000 °C

4,000 °C

Corresponding  
Temperatures



6. Record peak emission wavelengths for all spectra.

A-2800 Å	10,000°C	B-3600 Å	8,000°C	C-5500 Å	5,000°C	D-7000 Å	4,000°C
2-2810 Å	<10k°C	1-3625 Å	~8k°C	5-5470 Å	~5k°C	4-7040 Å	~4k°C
6-2812 Å	<10k°C	3-3612 Å	~8k°C	9-5510 Å	~5k°C	10-6940 Å	>4k°C
7-2790 Å	>10k°C	8-3595 Å	~8k°C	12-5515 Å	~5k°C	11-7005 Å	~4k°C

7. Estimate temperatures. > mark for standard.

8. Estimate temperatures for unknown Spectra.

Y-10,000°C    X-8,000°C    W-5,000°C    Z-4,000°C

3. Regroup & compare to your lists from question 4.

I	II	III	IV
2, 6, 7	1, 3, 8	5, 9, 12	4, 10, 11

These groups match perfectly to my groups in question 4.

4. Record peak emission wavelengths.

A	B	C	D	Corresponding Temperatures
2800 Å	3600 Å	5500 Å	7000 Å	
10,000°C	8,000°C	5,000°C	4,000°C	